

AMENDMENTS TO THE CLAIMS

Listing of Claims:

1. (Original) A process for making a porous catalyst, comprising
 - a) providing an aqueous solution containing a nanoparticle precursor;
 - b) forming a composition containing nanoparticles;
 - c) adding a first catalytic component or precursor thereof and a pore-forming agent to the composition containing nanoparticles and allowing the first catalytic component, the pore-forming agent, and the nanoparticles form an organic-inorganic structure;
 - d) removing water from the organic-inorganic structure; and
 - e) removing the pore-forming agent from the organic-inorganic structure so as to yield a porous catalyst.
2. (Original) The process according to claim 1 wherein step c) includes adding a dissolved salt of a first catalytic component.
3. (Original) The process according to claim 1 wherein the pore-forming agent is a cationic surfactant.
4. (Original) The process according to claim 1 wherein steps b) and c) are concurrent.
5. (Original) The process according to claim 1 wherein the nanoparticles are nanoparticles of a metal or metal oxide.
6. (Original) The process according to claim 1, further including the step of aging the organic-inorganic structure.
7. (Original) The process according to claim 1 wherein steps a) through c) are carried out such that the organic-inorganic structure is a gel-network.

8. (Original) The process according to claim 1 wherein step c) is carried out such that the porous catalyst is an aerogel or a xerogel.
9. (Original) The process according to claim 1 wherein the porous catalyst comprises nanoparticles in a coating of a first catalytic component wherein the surface density of the first catalytic component is greater than the monolayer surface density for the material comprising the first catalytic component.
10. (Original) The process according to claim 1 wherein the porous catalyst comprises nanoparticles in a coating of a first catalytic component wherein the surface density of the first catalytic component is greater than 4 molecules per nm².
11. (Original) The process according to claim 1 wherein the first catalytic component is non-crystalline in the porous catalyst.
12. (Original) The process according to claim 1 wherein the first catalytic component is at least partially polymerized in the porous catalyst.
- 13-18. (Canceled)
19. (New) The process according to claim 1, wherein the nanoparticles comprise zirconium oxide nanoparticles, titanium oxide nanoparticles, aluminum oxide nanoparticles, silicon oxide nanoparticles, or combinations thereof.
20. (New) The process according to claim 1, wherein the first catalytic component or precursor thereof comprises vanadium, tungsten, niobium, tantalum, rhenium, molybdenum, or combinations thereof.
21. (New) The process according to claim 1, wherein the pore-forming agent comprises an ethylene oxide block copolymer.

22. (New) The process according to claim 1, wherein the pore-forming agent comprises a non-ionic poly(ethylene oxide)-poly(propylene oxide)-poly(ethylene oxide) triblock copolymer.
23. (New) The process according to claim 22, wherein the pore-forming agent comprises EO₂₀PO₇₀EO₂₀, EO₅PO₇₀EO₅, EO₁₀₆PO₇₀EO₁₀₆, EO₁₇PO₆₀EO₁₇, or combinations thereof.
24. (New) The process according to claim 1, wherein the pore-forming agent comprises hexadecyl trimethyl ammonium, cetyl trimethyl ammonium bromide, or combinations thereof.
25. (New) The process according to claim 1, wherein the nanoparticles are zirconium oxide nanoparticles, the first catalytic component or precursor thereof comprises tungsten, and the pore-forming agent comprises EO₂₀PO₇₀EO₂₀, EO₅PO₇₀EO₅, EO₁₀₆PO₇₀EO₁₀₆, EO₁₇PO₆₀EO₁₇, or combinations thereof.
26. (New) The process according to claim 1, wherein the nanoparticles are zirconium oxide nanoparticles or aluminum oxide nanoparticles, the first catalytic component or precursor thereof comprises tungsten or vanadium, and the pore-forming agent comprises EO₂₀PO₇₀EO₂₀, EO₅PO₇₀EO₅, EO₁₀₆PO₇₀EO₁₀₆, EO₁₇PO₆₀EO₁₇, or combinations thereof.